Organic Vegetable Production Research
A neglected component of international agricultural research

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World Vegetable Center
• Introduction to the World Vegetable Center
• Rationale for organic initiative
• Current organic-friendly programs
• Our plan for future activities
Consultative Group on International Agricultural Research

CGIAR: 16 International Centers

World Vegetable Center
Outreach Centers

**Asian Regional Center**
Kasetsart University
Bangkok, Thailand

**Regional Center for Africa**
Arusha, Tanzania
Our Mission
Alleviate malnutrition and poverty through increased production and consumption of vegetables

Our Focus
Rural and urban poor in developing countries
Our Core Expertise

53,000 accessions
Plant breeding
IPM
Research networks
Impact analysis
Organic Vegetable Program: **Goals**

- Farmers will have safe, effective choices for growing vegetables and generating income
- Poor families will have increased supplies of safe, nutritious vegetables
Organic Vegetable Program: Activities

- Develop vegetable cultivars for disease and pest resistance
- Identify promising organic and indigenous practices
- Train researchers and extension specialists
- Analyze economic impacts
- Disseminate science-based information
Organic Vegetable Program: **Approach**

- **Identify** key problems
- **Collaborate** to maximize efficiency and effectiveness
- **Initiate** organic research experiments
- **Disseminate** results to researchers and extension specialists
Organic Vegetable Program: *Constraints*

- Lack of funds and formal research institutions
- Lack of qualified researchers and extension specialists
- Lack of communication among researchers, extension specialists, and farmers

BMZ/GTZ + IFOAM
New Network in Central Asia

Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan
Problem: *Diamondback Moth*

- DBM causes over US$1 billion of damage per year
- Resistant to chemical pesticides
Answer: International Teamwork

- Over 200 scientists from 30 countries met to discuss research findings
- Safe, biological control practices were developed
- Reduced costs, allowed organic production
Problem: *Eggplant Fruit and Shoot Borer*

- Most severe pest in Asia and East Africa today
- Farmers spray nearly every day in rainy season
- Extreme health threat to farmers and consumers
Answer: *International Teamwork*

- The World Vegetable Center, Bangladesh, India, Sri Lanka, and Thailand scientists work together to understand the pest problem.
- Alternative, pesticide-free strategy developed.
Problem: *Tomato Leaf Curl Virus*

- Severe threat to tomato production now rapidly spreading throughout the tropics and subtropics
- Transmitted by white fly
- Geographically distinct races
- Leaves curl, plants become stunted, and sometimes entire crops are lost
Answer: *International Teamwork*

- The World Vegetable Center, India and USA scientists identified wild tomato with broad resistance
- Wild tomato being cross with cultivated types
- Disease-resistant, productive lines selected through marker-assisted backcross breeding
On-going: *Nethouse Technology*

- Leafy vegetables are heavily sprayed with pesticides
- Nethouses have eliminated pesticide use entirely
On-going: *Nethouse Technology*
On-going: *Indigenous Vegetables*

- Easy-to-grow, nutritious, resist pests, and marketable
- Collect both germplasm and knowledge
- Identify superior types and multiplying their seeds
Future Organic Activities

1. Select varieties for organic production systems
2. Develop and evaluate biopesticides
3. Introduce underutilized vegetable legumes
4. Identify superior green manures
5. Composting formulations for local feedstocks
6. Enhance knowledge of soil microbial activity
7. Design protocols for site specific cropping systems
8. Organic demonstration garden for on-site research
9. Compare organic with conventional practices
10. Document market supply, demand, and consumption trends for organic products
11. Evaluate quality differences between organic and non-organic products
12. Training workshops on organic farming techniques
13. Post-docs, graduate, and undergraduate student research opportunities
Future Organic Activities

14. Bulletins on organic production practices, in multiple languages

15. On-line publications for downloading

16. Computer tutorials
Partnerships

Our Center welcomes partnerships to support organic agriculture and its role in fighting poverty.